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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/500,293	10/05/2004	Kiyoharu Oono	2144.0220000/RWE/RAS	9002

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EXAMINER	
PANARO, NICHOLAS J	

ART UNIT	PAPER NUMBER
1637	

DATE MAILED: 02/16/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	10/500,293	OONO ET AL.	
	Examiner	Art Unit	
	Nicholas J. Panaro	1637	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☐ Responsive to communication(s) filed on _____.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) 1-6 is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) 1-6 is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on 29 June 2004 is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

Claim Rejections - 35 USC § 112

The following is a quotation of the second paragraph of 35 U.S.C. 112:

> The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claims 1-6 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claims 1-6 are indefinite or failing to particularly point and distinctly claim the subject matter which applicant regards as the invention. The term LSI as recited in claims 1-3 and 5-6 is indefinite because the metes and bounds are unclear. Additionally, art recognized definitions for LSI include things other than integrated circuits, for example although the specification breathes life into the meaning it does not limit the claims. The term LSI as defined in the specification at page 1, line 35 defines LSI as a "large scale integrated circuit", however, there is no limitation as to the metes and bounds of the term "large" which is a relative term and as such is indefinite.

Claim 5 is indefinite for failing to clearly set the metes and bounds of the term "mediates" because the process by which an antibody "mediates" the binding of a protein is unclear. Is the antibody linked to the substrate? Does the antibody directly or indirectly "mediate" the binding of the protein?

Claim 6 recites the limitation "a sugar chain of the protein" in line 1. There is insufficient antecedent basis for this limitation in the claim.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 1-3 are rejected under 35 U.S.C. 102(b) as being anticipated by Mandecki (U.S. Patent 6,046,003, issued April 4, 2000).

Regarding claim 1, Mandecki teaches a method for producing a labeled nucleic acid (e.g., fluorescently-labeled target DNA bound to probe attached to the surface of the transponder), wherein the method comprises binding the nucleic acid (e.g., oligonucleotides) to a large scale integrated circuit (e.g., solid phase particles having a transponder associated with each particle), and recording specific information (e.g., the sequence of the oligonucleotide) on the large scale integrated circuit (column 1, lines 55 – column 2, line 6; column 17, lines 28-44).

Regarding claim 1, Mandecki teaches a method for producing a labeled protein (e.g., protein-nucleic acid) wherein the method comprises binding the protein to a large scale integrated, and recording specific information on the large scale integrated circuit (Column 3, lines 25-27).

Regarding claim 2, Mandecki teaches wherein the specific information is characteristic to the nucleic acid (e.g., the sequence of the oligionucleotide) bound to the LSI (column 1, lines 58-60).

Regarding claim 3, Mandecki teaches a method wherein a substrate (e.g., monoisocyanate) mediates the binding of a nucleic acid to the large scale integrated circuit (column 8, lines 21-45).

Accordingly, the claimed invention is anticipated by Mandecki et al.

Claims 1 and 3-5 are rejected under 35 U.S.C. 102(b) as being anticipated by Gordon et al (U.S. Patent 6,251,595, issued June 26, 2001).

Regarding claim 1, Gordon et al teach a method for producing a labeled (e.g., electronically addressed, column 6, lines 15-17) nucleic acid, wherein the method comprises binding the nucleic acid (e.g., oligonucleotides) to a large scale integrated circuit (e.g., electrode assembly; column 18, lines 1-65; column 14, lines 36-49; Fig. 2), and recording specific information on the large scale integrated circuit (column 5, lines 19-22).

Regarding claim 1, Gordon et al teach a method for producing a labeled (e.g., electronically addressed, column 6, lines 15-17) protein, wherein the method comprises binding the protein (e.g., enzymes, column 11, lines 51-60) to a large scale integrated circuit (e.g., electrode assembly; column 18, lines 1-65; column 14, lines 36-49; Fig. 2), and recording specific information on the large scale integrated circuit (column 5, lines 19-22).

Regarding claim 3, Gordon et al teach a method wherein a substrate (e.g., cellulosic materials and materials derived from cellulose) mediates the binding of a nucleic acid or protein to the large scale integrated circuit (column 9, lines 35-40).

Regarding claim 4, Gordon et al teach a method wherein a cellulose vinyl acetate (e.g., cellulosic materials and materials derived from cellulose) mediates the binding of a nucleic acid or protein to the large scale integrated circuit (column 9, lines 35-40).

Regarding claim 5, Gordon et al teach a method wherein an antibody bound to a protein mediates the binding of protein to the large scale integrated circuit (e.g., antigen-antibody, column 11, lines 51-63).

Accordingly, the claimed invention is anticipated by Gordon et al.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

Claim 6 rejected under 35 U.S.C. 103(a) as being unpatentable over Mandecki (U.S. Patent 6,046,003, issued April 4, 2000) in view of Keogh (U.S. Patent 5,728,420, issued March 17, 1998).

Regarding claim 6, Mandecki teaches a method for producing a labeled nucleic acid (e.g., fluorescently-labeled target DNA bound to probe attached to the surface of the transponder), wherein the method comprises binding the nucleic acid (e.g., oligonucleotides) to a large scale integrated circuit (e.g., solid phase particles having a transponder associated with each particle), and recording specific information (e.g., the sequence of the oligonucleotide) on the large scale integrated circuit (Column 1, lines 55 – column 2, line 6; column 17, lines 28-44). Mandecki does not teach wherein a sugar chain of the protein is attached to the LSI, and a characteristic of the sugar chain of the protein is described on the LSI.

This concept, the attachment of a sugar chain of a protein to a substrate, however, was well known in the art. Specifically, Keogh teaches a sugar chain of the protein (e.g., glycoproteins) is attached to a substrate (column 3 line 36 – column 4, line 13) for the advantage of preventing conformational changes in said protein (column 5, lines 1-13). Thus Keogh teaches the composition and provides a clear motivation to bind protein for the use of labeling as binding to the sugar moiety allows the protein to function in it's known and expected ways.

Keogh is seen to meet all limitations of the claim because attachment of the sugar chain protein to the substrate is seen to encompass both directly and indirectly mediate linkage. Therefore, the combination of Mandecki and Keogh is seen to encompass the claimed invention.

Therefore, it would have been obvious to one of ordinary skill in the art at the time the claimed invention was made to combine the teachings of Mandecki and Keogh to attach a protein via a sugar chain of said protein to the LSI, and to describe a characteristic of said sugar chain of said protein on the LSI. One of ordinary skill would have been motivated to do so for the advantage of preventing conformational changes in said protein (column 5, lines 1-13).

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Nicholas J. Panaro whose telephone number is (571) 272-0778. The examiner can normally be reached on Monday - Friday 7:00 am to 3:30 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Gary Benzion can be reached on (571) 272-0782. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for.unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

NJP

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